

<b>INVITATION TO BID</b>		<b>LSU</b>	<b>BID DUE DATE AND TIME</b>	
BOARD OF SUPERVISORS OF LOUISIANA STATE UNIVERSITY AND AGRICULTURAL & MECHANICAL COLLEGE			<b>04/28/2006</b>	<b>11:00 AM CT</b>
<b>SOLICITATION 000000375</b> VENDOR # 0006206 29 VENDOR NAME AND ADDRESS <div style="border: 1px solid black; height: 80px; width: 350px; margin-top: 10px;"></div>			RETURN BID TO  LSU LOUISIANA STATE UNIV. PURCHASING OFFICE 213 THOMAS BOYD HALL Baton Rouge LA 70803 BUYER Ashley E. Terrio, CPPB BUYER PHONE (225)578-2097  ISSUE DATE 04/07/2006	
TITLE: SYSTEM, ANALYZER				

### To Be Completed By Bidder

1. \_\_\_\_\_ "No Bid" (sign and return this page only).
2. \_\_\_\_\_ My Company does not wish to receive future solicitations for this commodity code.
3. Specify your Delivery: To be made within \_\_\_\_\_ days after receipt of order.
4. Specify your Payment Terms: \_\_\_\_\_  
 Prompt payment cash discounts for less than 30 days and less than 1% will be accepted, but will not be considered in determining awards. On indefinite quantity term contracts, cash discounts will be accepted and taken, but will not be considered in determining awards.
5. Specify your Bid Reference Number: \_\_\_\_\_  
 (This number will appear on any resulting order or contract.)

### General Instructions to Bidders

1. Sealed bids for furnishing the items and/or services specified are hereby solicited, and will be received by the issuing LSU Campus/Department at the "Return Bid To" address stated above, until the specified due date and time.
2. Bids must be signed by a person authorized to bind the vendor. In accordance with Louisiana R.S. 39:1594, the person signing the bid must be: (1) a current corporate officer, partnership member, or other individual specifically authorized to submit a bid as evidenced in the appropriate records filed with the Louisiana Secretary of State; or (2) an individual authorized to bind the vendor as evidenced by a corporate resolution, certificate or affidavit; or (3) other documents indicating authority which are acceptable to the public entity.
3. Read the entire solicitation, including all terms, conditions and specifications.
4. All bid information and prices must be typed or written in ink. Any corrections, erasures or other forms of alteration to unit prices are to be initialed by the bidder.
5. Bid prices shall include all delivery charges paid by the vendor, F.O.B. LSU Destination, unless otherwise provided in the solicitation. Any invoiced delivery charges not quoted and itemized on the LSU purchase order are subject to rejection and non-payment.
6. Payment is to be made within 30 days after receipt of properly executed invoice, or delivery and acceptance, whichever is later. Delinquent payment penalties are governed by L.R.S. 39:1695.
7. By signing this solicitation, the bidder certifies compliance with all general instructions to bidders, terms, conditions and specifications; and further certifies that this bid is made without collusion or fraud.

BIDDER (Name of Firm)	MAILING ADDRESS
AUTHORIZED SIGNATURE	CITY, STATE ZIP
PRINTED NAME	PHONE #
TITLE	FAX #
E-MAIL	FEDERAL TAX ID #

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These standard terms and conditions shall apply to all LSU solicitations, unless otherwise specifically amended and provided for in the special terms and conditions, specifications, or other solicitation documents. In the event of conflict between the General Instructions to Bidders or Standard Terms & Conditions and the Special Terms & Conditions, the Special Terms & Conditions shall govern.

Bids submitted are subject to provisions of the laws of the State of Louisiana, including but not limited to: the Louisiana Procurement Code (R.S. 39:1551-1736); Purchasing Rules and Regulations (Title 34 of the Louisiana Administrative Code); Executive Orders; and the terms, conditions, and specifications stated in this solicitation.

**1. Bid Delivery and Receipt**

To be considered, sealed bids must be received and time-stamped at the "Return Bid To" address no later than the due date and time specified herein. Sealed bids cannot be accepted by telegraph, fax, or e-mail. Price alterations and addenda to bids may be submitted by telegraph or fax, and will be considered provided bidder's sealed bid, price alterations and addenda have been received in the purchasing office prior to bid opening time. Late bids cannot be accepted per L.A.C. 34.I.517, and shall be returned unopened.

**2. Bid Forms**

Bids are to be submitted on and in accordance with the LSU solicitation forms provided, and must be signed by an authorized agent of the vendor. Bids submitted on other forms or in other price formats may be considered informal and may be rejected in part or in its entirety. Bids submitted in pencil and/or bids containing no original signature indicating the bidder's intent to be bound will not be accepted.

**3. Interpretation of Solicitation/Bidder Inquiries**

If bidder is in doubt as to the meaning of any part or requirement of this solicitation, bidder may submit a written request for interpretation to the Buyer-of-Record at the address and/or fax number shown above. Written inquiries must be received in the Purchasing Office no later than five (5) calendar days prior to the opening of bids, and shall be clearly cross-referenced to the relevant solicitation/specification in question.

No decisions or actions shall be executed by any bidder as a result of oral discussions with any LSU employee or consultant. Any interpretation of the documents will be made by formal addendum only, issued by the Purchasing Office, and mailed or delivered to all bidders known to have received the solicitation. LSU shall not be responsible for any other interpretations or assumptions made by bidder.

**4. Bid Opening**

Bidders may attend the public bid opening of sealed bids and proposals. No information or opinions concerning the ultimate contract award will be given at bid opening or during the evaluation process. Written bid tabulations will not be furnished. Bids may be examined within 72 hours after bid opening. Information pertaining to completed files may be secured by visiting the Purchasing Office during normal working hours.

**5. Special Accommodations**

Any "qualified individual with a disability" as defined by the Americans with Disabilities Act, who has submitted a bid and desires to attend the public bid opening, must notify the Purchasing Office in writing not later than seven days prior to the bid opening date of their need for special accommodations. If the request cannot be reasonably provided, the individual will be informed prior to the bid opening.

**6. Standards of Quality**

Any product or service bid shall conform to all applicable federal, state and local laws and regulations, and the specifications contained in the solicitation. Any manufacturer's name, trade name, brand name, or catalog number used in the specification is for the purpose of describing the standard of quality, performance, and characteristics desired; and is not intended to limit or restrict competition. Bidder must specify the brand and model number of the product offered in his bid. Bids not specifying brand and model number shall be considered as offering the exact product specified in the solicitation.

**7. New Products/Warranty/Patents**

All products bid for purchase must be new, never previously used, of the manufacturer's current model and/or packaging, and of best quality as measured by acceptable trade standards. No remanufactured, demonstrator, used or irregular products will be considered for purchase unless otherwise specified.

The manufacturer's standard published warranty and provisions shall apply, unless more stringent warranties are otherwise required by LSU and specified in the solicitation. In such cases, the bidder and/or manufacturer shall honor the specified warranty requirements, and bid prices shall include any premium costs of such coverage.

Bidder guarantees that the products proposed and furnished will not infringe upon any valid patent or trademark; and shall, at its own expense, defend any and all actions or suits charging such infringement, and shall save LSU harmless.

**8. Descriptive Information**

Bidders proposing an equivalent brand or model are to submit with the bid descriptive information (such as literature, technical data, illustrations, etc) sufficient for LSU to evaluate quality, suitability, and compliance with the specifications. Failure to

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submit descriptive information may cause bid to be rejected. Any changes made by bidder to a manufacturer's published specifications shall be verifiable by the manufacturer. If items bid do not fully comply with specifications, bidder must state in what respect items deviate. Bidder's failure to note exceptions in its bid will not relieve the bidder from supplying the actual products requested.

#### 9. Bids/Prices/F.O.B. Point

- The bid price for each item is to be quoted on a "net" basis and F.O.B. LSU Destination, i.e. title passing upon receipt and inclusive of all delivery charges, any item discounts, etc.
- Bids other than F.O.B. LSU Destination may be rejected.
- Bids indicating estimated freight charges may be rejected.
- Bids requiring deposits, payment in advance, or C.O.D. terms may be rejected.
- Bidders who do not quote "net" item prices and who separately quote an overall "lump sum" freight cost or discount for all items shall be considered as submitting an "all-or-none" bid for evaluation and award purposes; and risk rejection if award is made on an item basis.
- Prices shall be firm for acceptance for a minimum of 30 days, unless otherwise specified. Bids conditioned with shorter acceptance periods may be rejected.
- Prices are to be quoted in the unit/packaging specified (e.g. each, 12/box, etc), or may be rejected.
- In the event of extension errors, the unit price bid shall prevail.

#### 10. Taxes

Vendor is responsible for including all applicable taxes in the bid price. LSU is exempt from all Louisiana state and local sales and use taxes. By accepting an award, resident and non-resident firms acknowledge their responsibility for the payment of all taxes duly assessed by the State of Louisiana and its political subdivisions for which they are liable, including but not limited to: franchise taxes, privilege taxes, sales taxes, use taxes, ad valorem taxes, etc.

#### 11. Terms and Conditions

This solicitation contains all terms and conditions with respect to the purchase of the goods and/or services specified herein. Submittal of any contrary terms and conditions may cause your bid to be rejected. By signing and submitting a bid, vendor agrees that contrary terms and conditions which may be included in its bid are nullified; and agrees that this contract shall be construed in accordance with this solicitation and governed by the laws of the State of Louisiana.

#### 12. Vendor Forms/LSU Signature Authority

The terms and conditions of the LSU solicitation and purchase order/contract shall solely govern the purchase agreement, and shall not be amended by any vendor contract, form, etc.

The University's chief procurement officer, or authorized designee, is delegated sole authority to execute/sign any vendor contracts, forms, etc, on behalf of LSU. Departments are expressly prohibited from signing any vendor forms.

Any such vendor contracts/forms bearing unauthorized signatures shall be null and void, shall have no legal force, and shall not be recognized by LSU in any dispute arising therefrom. Vendors who present any such forms to department users for signature without regard to this strict LSU policy may face contract cancellation, suspension, and/or debarment.

#### 13. Awards

Award will be made to the lowest responsible and responsive bidder. LSU reserves the right: (1) to award items separately, grouped, or on an all-or-none basis, as deemed in its best interest; (2) to reject any or all bids and/or items; and (3) to waive any informalities.

All solicitation specifications, terms and conditions shall be made part of any subsequent award as if fully reproduced and included therein, unless specifically amended in the formal contract.

#### 14. Acceptance of Bid

Only the issuance of an official LSU purchase order/contract, a Notification of Award letter, or a Notification of Intent to Award letter shall constitute the University's acceptance of a bid. LSU shall not be responsible in any way to a vendor for goods delivered or services rendered without an official purchase order/contract.

#### 15. Applicable Law

All contracts shall be construed in accordance with and governed by the laws of the State of Louisiana.

#### 16. Awarded Products/Unauthorized Substitutions

Only those awarded brands and numbers stated in the LSU contract are approved for delivery, acceptance, and payment purposes. Any substitutions require prior approval of the Purchasing Office. Unauthorized product substitutions are subject to rejection at time of delivery, post-return at vendor's expense, and non-payment.

#### 17. Testing/Rejected Goods

Vendor warrants that the products furnished will be in full conformity with the specification, drawing or sample, and agrees that this warranty shall survive delivery, acceptance, and use. Any defect in any product may cause its rejection. LSU reserves the right to test products for conformance to specifications both prior to and after any award. Vendor shall bear the cost of testing

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if product is found to be non-compliant. All rejected goods will be held at vendor's risk and expense, and subject to vendor's prompt disposition. Unless otherwise arranged, rejected goods will be returned to the vendor freight collect.

**18. Delivery**

Vendor is responsible for making timely delivery in accordance with its quoted delivery terms. Vendor shall promptly notify the LSU Department and/or Purchasing Office of any unforeseen delays beyond its control. In such cases, LSU reserves the right to cancel the order and to make alternative arrangements to meet its needs.

**19. Default of Vendor**

Failure to deliver within the time specified in the bid/award will constitute a default and may be cause for contract cancellation. Where the University has determined the vendor to be in default, LSU reserves the right to purchase any or all goods or services covered by the contract on the open market and to surcharge the vendor with costs in excess of the contract price. Until such assessed surcharges have been paid, no subsequent bids from the defaulting vendor will be considered for award.

**20. Vendor Invoices**

Invoices shall reference the LSU purchase/release order number, vendor's packing list/delivery ticket number, shipping/delivery date, etc. Invoices are to be itemized and billed in accordance with the order, show the amount of any prompt payment discount, and submitted on the vendor's own invoice form. Invoices submitted by the vendor's supplier are not acceptable.

**21. Delinquent Payment Penalties**

Delinquent payment penalties are mandated and governed by Louisiana R.S. 39:1695. Vendor penalties to the contrary shall be null and void, shall have no legal force, and shall not be recognized by LSU in any dispute arising therefrom.

**22. Assignment of Contract/Contract Proceeds**

Vendor shall not assign, sublet or transfer its contractual responsibilities, or payment proceeds thereof, to another party without the prior written consent and approval of the Purchasing Office. Unauthorized assignments of contract or assignments of contract proceeds shall be null and void, shall have no legal force, and shall not be recognized by LSU in any dispute arising therefrom.

**23. Contract Cancellation**

LSU has the right to cancel any contract for cause, in accordance with purchasing rules and regulations, including but not limited to: (1) failure to deliver within the time specified in the contract; (2) failure of the product or service to meet specifications, conform to sample quality or to be delivered in good condition; (3) misrepresentation by the vendor; (4) fraud, collusion, conspiracy or other unlawful means of obtaining any contract with the University; (5) conflict of contract provisions with constitutional or statutory provisions of state or federal law; (6) any other breach of contract.

LSU has the right to cancel any contract for convenience at any time by giving thirty (30) days written notice to the vendor. In such cases, the vendor shall be entitled to payment for compliant deliverables in progress.

**24. Prohibited Contractual Arrangements**

Per Louisiana R.S. 42:1113.A, no public servant, or member of such a public servant's immediate family, or legal entity in which he has a controlling interest shall bid on or enter into any contract, subcontract, or other transaction that is under the supervision or jurisdiction of the agency of such public servant. See statute for complete law, exclusions, and provisions.

**25. Equal Employment Opportunity Compliance**

By submitting and signing this bid, vendor agrees to abide by the requirements of the following as applicable: Title VI and VII of the Civil Rights Act of 1964, as amended by the Equal Opportunity Act of 1972; federal Executive Order 11246; federal Rehabilitation Act of 1973, as amended; the Vietnam Era Veteran's Readjustment Assistance Act of 1974; Title IX of the Education Amendments of 1972; the Age Act of 1975; the Americans with Disabilities Act of 1990. Vendor agrees not to discriminate in its employment practices, and will render services under any contract entered into as a result of this solicitation without regard to race, color, religion, sex, age, national origin, veteran status, political affiliation, handicap, disability, or other non-merit factor. Any act of discrimination committed by vendor, or failure to comply with these statutory obligations when applicable, shall be grounds for termination of any contract entered into as a result of this solicitation.

**26. Mutual Indemnification**

Each party hereto agrees to indemnify, defend, and hold the other, its officers, directors, agents and employees harmless from and against any and all losses, liabilities, and claims, including reasonable attorney's fees arising out of or resulting from the willful act, fault, omission, or negligence of the indemnifying party or of its employees, contractors, or agents in performing its obligations under this agreement, provided however, that neither party hereto shall be liable to the other for any consequential damages arising out of its willful act, fault, omission, or negligence.

**27. Certification of No Suspension or Debarment**

By signing and submitting this bid, bidder certifies that its company, any subcontractors, or principals thereof, are not suspended or debarred under federal or state laws or regulations. A list of parties who have been suspended or debarred by federal agencies is maintained by the General Services Administration and can be viewed on the internet at [www.epls.gov](http://www.epls.gov).

<b>SPECIAL TERMS &amp; CONDITIONS</b>		<b>INVITATION TO BID</b>	PAGE 5
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<p>01 LSU is a member of the National Association of Educational Buyers (NAEB) and the E &amp; I Cooperative Purchasing Service.</p> <p>02 If an automobile is utilized in the execution of the contract, including deliveries made with company owned, hired, and/or non-owned vehicles, successful bidder shall be required to furnish a certificate of insurance evidencing coverages per attached insurance requirements. The Board of Supervisors of Louisiana State University and Agricultural and Mechanical College shall be named as an additional insured on all liability policies.</p> <p>03 Sealed Bid Delivery Instructions and Advisory: To assure consideration, your bid must be submitted in a sealed envelope or package and should be clearly and prominently marked with the solicitation number and bid due date, or may be submitted in the special bid return envelope if one was furnished for that purpose. Bidders are advised that the U.S. Postal Service does not make deliveries to our physical location. USPS mail is delivered to the University's mail center and is redelivered using internal resources. Bidders may deliver bids by hand or by a courier service to our physical location at the "Return Bid To" address specified. The University shall not be responsible for any delays caused by the Bidder's chosen means of bid delivery. Bidder is solely responsible for the timely delivery of its bid, and failure to meet the bid due date and time shall result in rejection of the bid. Your attention is also directed to Standard Terms &amp; Conditions No. 1 - Bid Delivery and Receipt.</p> <p>04 A preference, if applicable, may be allowed for products produced, manufactured, assembled, grown or harvested in Louisiana. Do you claim this preference? Yes _____ No _____. Note: Preferences shall not apply to service contracts. Is your Louisiana business workforce composed of a minimum of fifty percent Louisiana residents? Yes _____ No _____. Specify Item Number and location within Louisiana where the product is/was produced, manufactured, assembled, grown or harvested: _____ Note: This preference is not applicable for services.</p> <p>05 In order for the University to be assured that current fiscal year funds are available for this purchase, delivery and invoicing must be made no later than June 30. Please consider this constraint when quoting number of days required to complete delivery.</p>			

**PRICE SHEET****INVITATION TO BID**

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ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENDED AMOUNT
0001	<p>UNLESS SPECIFIED ELSEWHERE, SHIP ALL ITEMS TO: LSU Electrical Engineering Bldg Electrical &amp; Computer Eng 102 South Campus Drive Baton Rouge, LA 70803</p> <p>ALL-OR-NONE AWARD: It is the intent of the University to award all items on an all-or-none basis to the overall lowest responsive and responsible bidder.</p> <p>Commodity Code: 490-43 Analyzer, PNA-L network analyzer to include the following: N52300-025, 300 kHz to 6 GHz 2 port, configurable test set and extended power range; N52300-080, Frequency offset mode; and R-51B-001-3C, 1 year Return-to-manufacturer warranty extended to 3 years. To Be Mfg'r/Brand: AGILENT To Be Model/Number: N5230A Specify Manufacturer / Brand Bid:</p> <p>Specify Model / Number Bid:</p>	1.00	EA	\$	\$

## PRICE SHEET

## INVITATION TO BID

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ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENDED AMOUNT
0002	Commodity Code: 490-43 Analyzer, PSA Spectrum Analyzer 3 Hz - 13.2 GHz, Type N Connector, US - English localization to include the following: E4445A-1DS, Internal Preamplifier; and R-51B-001-3C, 1 year Return-to-manufacturer warranty extended to 3 years. To Be Mfgtr/Brand: AGILENT , or equal. To Be Model/Number: E4445A , or equal. Specify Manufacturer / Brand Bid:  Specify Model / Number Bid:  	1.00	EA	\$	\$
0003	Commodity Code: 490-43 Generator, Signal, 2 GHz ESG-A Analog Series RF Signal Generator, CD-ROM English documentation set and R-51B-001-3C, 1 year return to manufacturer warranty extended to 3 years. To Be Mfgtr/Brand: AGILENT , or equal. To Be Model/Number: E4420B , or equal.	1.00	EA	\$	\$

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ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENDED AMOUNT
	Specify Manufacturer / Brand Bid:  Specify Model / Number Bid:				
0004	Commodity Code: 490-43 Power Supply, DC power supply, low-cost, dual-range: 8V/3A, 15V/2A, 30W to include the following: E3610A-0EM, 115V single-phase 3-wire, 115 VAC +/- 11V operation, 47 to 63 Hz, and R-51B-001-3C, 1 year Return-to-manufacturer warranty extended to 3 years. To Be Mfg'r/Brand: AGILENT To Be Model/Number: E3610A Specify Manufacturer / Brand Bid:  Specify Model / Number Bid:	2.00	EA	\$	\$
0005	Commodity Code: 490-43 Cable, GPIB cable, 1 meter To Be Mfg'r/Brand: AGILENT To Be Model/Number: 10833A	2.00	EA	\$	\$

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ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENDED AMOUNT
	Specify Manufacturer / Brand Bid:  Specify Model / Number Bid:				
0006	Commodity Code: 490-43 Probe, High frequency probe, 300 kHz to 3 GHz to include the following: R-51B-001-3C, 1 year Return-to-manufacturer warranty extended to 3 years. To Be Mfg/Brand: AGILENT To Be Model/Number: 85024A Specify Manufacturer / Brand Bid:  Specify Model / Number Bid:	1.00	EA	\$	\$
0007	Commodity Code: 490-43 Limiter 0.01 - 18 GHz P1db of 25dBm and 1 year Return-to-manufacturer warranty. To Be Mfg/Brand: AGILENT To Be Model/Number: N9356B Specify Manufacturer / Brand Bid:	1.00	EA	\$	\$

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ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENDED AMOUNT
0008	<p>Specify Model / Number Bid:</p> <hr/> <p>Commodity Code: 490-43                      Converter, USB/GPIB Interface                      Converter to control GPIB                      Instruments over USB and 1 year                      Return-to-manufacturer                      warranty.                      To Be Mfgtr/Brand: AGILENT                      To Be Model/Number: 82357A                      Specify Manufacturer / Brand Bid:</p> <hr/> <p>Specify Model / Number Bid:</p> <hr/>	1.00	EA	\$	\$
0009	<p>Commodity Code: 490-43                      Cable Set, 3.5 to 3.5 mm Flex                      Test Port Cable Set and 3 month                      Return-to-manufacturer                      warranty.                      To Be Mfgtr/Brand: AGILENT                      To Be Model/Number: 85131F                      Specify Manufacturer / Brand Bid:</p> <hr/>	1.00	EA	\$	\$

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ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENDED AMOUNT
0010	<p>Specify Model / Number Bid:</p> <hr/> <p>Commodity Code: 490-43  Adapter, 3.5 mm (m), Type-N  (m).  To Be Mfg'r/Brand: AGILENT  To Be Model/Number: 1250-1743  Specify Manufacturer / Brand Bid:</p> <hr/> <p>Specify Model / Number Bid:</p> <hr/>	1.00	EA	\$	\$
0011	<p>Commodity Code: 490-43  Adapter, 3.5 mm (f), Type-N  (m).  To Be Mfg'r/Brand: AGILENT  To Be Model/Number: 1250-1744  Specify Manufacturer / Brand Bid:</p> <hr/> <p>Specify Model / Number Bid:</p> <hr/>	1.00	EA	\$	\$
0012	<p>Commodity Code: 490-43  Module, Type-N 50 Ohm RF ECal</p>	1.00	EA	\$	\$

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ITEM No.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENDED AMOUNT
	<p>Module, 300 kHz to 9 GHz to include the following: 1 year Return-to-Agilent warranty; 85092C-00F, Both Type-N 50-Ohm connectors are female on module; and 85092C-00A, Add Type-N 50-Ohm adapters.</p> <p>To Be Mfg'r/Brand: AGILENT , or equal.</p> <p>To Be Model/Number: 85092C , or equal.</p> <p>Specify Manufacturer / Brand Bid:</p> <p>Specify Model / Number Bid:</p>				

**BOARD OF SUPERVISORS  
LOUISIANA STATE UNIVERSITY AND  
AGRICULTURAL & MECHANICAL COLLEGE  
Purchasing Office, 213 Thomas Boyd Hall  
Baton Rouge, LA 70803-3001**

**INSURANCE REQUIREMENTS**

**WORKMEN'S COMPENSATION AND EMPLOYER'S LIABILITY INSURANCE:** The Contractor shall, before commencing any work to be conducted under this contract, procure Workmen's Compensation and Employer's Liability insurance with a limit of liability as required by the Labor Code of the State of Louisiana with an insurance company authorized to write such policies of insurance in the State of Louisiana. It shall be the further responsibility of the Contractor to require that all subcontractors have in full force and effect, a policy of Workmen's Compensation and Employer's Liability insurance before proceeding with any of the work required under this contract. The Employer's Liability limit shall be \$1,000,000 when work is over water and involves maritime exposure.

**COMMERCIAL GENERAL LIABILITY INSURANCE:** Commercial General Liability Insurance with a combined single limit of \$1,000,000 per occurrence for bodily injury and property damage. This insurance shall include the following coverage:

1. Premises - Operations;
2. Broad Form Contractual Liability;
3. Products and Completed Operations;
4. Use of Contractors and Subcontractors;
5. Personal Injury;
6. Broad Form Property Damage;
7. Explosion, Collapse and Under ground (XCU) Coverage.

**BUSINESS AUTOMOBILE LIABILITY INSURANCE:** Business Automobile Liability Insurance with a combined single limit of \$1,000,000 per occurrence for bodily injury and property damage, unless otherwise indicated. This insurance shall include for bodily injury and property damage the following coverages:

1. Owned automobiles;
2. Hired automobiles;
3. Non-owned automobiles.

If the vendor/contractor does not own an automobile and an automobile is utilized in the execution of the contract, then only hired and non-owned coverage is acceptable. If an automobile is not utilized for the execution of the contract, then automobile coverage is not required.

Board of Supervisors of Louisiana State University and Agricultural & Mechanical College shall be named as additional insured on all liability policies. A Thirty (30) day prior notice of cancellation must be given to the University for all required coverages. Insurance must be from a company with an A.M. Best's rating of no less than A-:VI who is authorized to do business in the State of Louisiana. The A.M. Best's rating requirement may be waived for Worker's Compensation only.

The successful contractor is to provide the owner with a certificate of insurance prior to commencement of work.

## SPECIFICATIONS

### 1. N5230A, PNA-L series Vector Network Analyzer:

Agilent N5230A, PNA-L, 300Khz to 6Ghz

Extended Power Range:

500Mhz to 2Ghz = 137db

2Ghz to 6Ghz = 137db

Test Port noise floor, at 10Hz IF BW:

500Mhz to 2 Ghz = <-112 dbm

2Ghz to 4 Ghz = <-112 dbm

122 dB of dynamic range and 0.004 of trace noise

< 4.5 µsec/point measurement speed, 32 channels, 16,001 points

TRL/LRM calibration, on-wafer, in-fixture, and waveguide measurements

3.5 mm (male) connectors

Calibration capabilities:

Unknown Thru calibration

Automatic Port Extensions (gain & phase offset compensation)

Expanded Calibration (weighted least-squares techniques for improved accuracy)

Ecal user characterization

## **2. E4445A, PSA Spectrum Analyzer, 3 Hz – 13.2 GHz:**

Future capability to be compatible to 89601A Vector Signal Analysis Software.

Dynamic Range:

+17 dBm third order intercept (TOI) (+19 dBm typical)

-116 dBc/Hz phase noise at 10 kHz offset (-118 dBc/Hz typical)

±0.62 dB absolute amplitude accuracy (±0.24 dB typical)

±0.38 dB frequency response (±0.11 dB typical)

±0.07 dB log amplification linearity

Fast low-level spur search

<30 ms fast ACP measurement

50 measurements per second local update rate (45 for remote operation)

Standard Features:

Full detector suite

160 resolution bandwidth settings (10% steps)

2 dB step attenuator

FFT and swept measurement modes

Gated sweep

Power Suite one-button power measurements

EMI measurements with CISPR compliant bandwidths and detectors

Optional, Built-in preamplifier

**3. E4420B, 2GHz ESG-A Analog Series RF Signal Generator:**

Agilent E4420B RF signal generator, frequency range from 250-Khz to 2-Ghz

Flexible architecture, upgrade paths for options

Choice of electronic or mechanical attenuator

Superior level accuracy

Wideband FM and Phase Modulation, AM and Pulse Modulation

Step sweep (frequency, power and list)

Built-in function generator

Standard one-year global warranty

**4. E3610A, DC Power Supply, Low-Cost, Dual-Range 8V/3A, 15V/2A, 30 W:**

DC Power Supply. Dual-range: 8V/3A. 15V/2A. 30W

Utilize dual-range outputs to provide greater current at lower voltages

Small, compact form factor

**5. 10833A, GPIB Cable, 1 Meter:**

GPIB cables are fully compatible with the IEEE 488.1 mechanical specification.

**6. 85024A, High Frequency Probe:**

Agilent 85024A high-frequency probe required for in-circuit measurements

Frequency range 300KHz to 3GHz

Input capacitance of only 0.7 pF shunted by 1 megohm of resistance.

Excellent frequency response and unity gain guarantee high accuracy in swept measurements.

High probe sensitivity and low distortion levels.

Input capacitance (at 500 MHz) < 0.7pF (nominal)

Input resistance 1 M (nominal)

Bandwidth 300 kHz to 3 GHz (nominal), Usable to 100 kHz

Average gain 0 dB  $\pm$  1.25 dB

Frequency response (relative to Average Gain): 300 kHz to 1 GHz  $\pm$ 1.25 dB, 1 GHz to 3 GHz  $\pm$ 2.5 dB

Average noise level < 1 mV, 10 Hz to 10 MHz

Input voltage for < 1 dB compression 0.3 V

**7. N9356B, Limiter 0.01 – 18 GHz P1db of 25dBm:**

Frequency range 0.01 to 18 GHz

Low insertion loss < 1.75 dB

Very fast turn-on time < 100 ps

Limiting threshold 25 dBm, typical

Bi-directional

Integrated DC block

**8. 82357A, USB/GPIB Interface Converter to Control GPIB Instruments Over USB:**

Interface provides a direct connection from a USB port on a laptop or desktop PC to GPIB instruments. There are no switches to set, no PC cards to install, and no external power supplies required.

Easy connection - plug and play interface

Standard - USB 1.1 interface (USB 2.0 compatible) and IEEE 488 interface (connect to up to 14 GPIB instruments)

Standard - industry libraries

High speed - transfer over 850KB/sec

**9. 85131F, 3.5 to 3.5 mm Flex Test Port Cable Set:**

Agilent 85131F is a 62.2 cm (24.5 in) long<sup>1</sup> flexible cable set composed of a 3.5 mm female<sup>2</sup> to PSC-3.5 mm female connector and

a 3.5mm female<sup>2</sup> to a 3.5 mm male connector.

Frequency range is dc to 26.5 GHz

Return loss greater than or equal to 6 dB

Insertion loss is  $0.25 * \sqrt{f} + 0.2$  dB, where f is frequency in GHz, for the test port connector and 1.5 dB at maximum frequency for the device connector.

Phase stability of semi-rigid/flexible cables is specified with a 90 degree bend using a 4 to 3 inch radius.

Stability<sup>1</sup> of the Agilent 85131F is less than 0.12 dB and phase is  $0.13 * f + 0.5$ , where f is frequency in GHz.

--<sup>1</sup> Cable length and stability are supplemental characteristics.

--<sup>2</sup> Special rugged female connector is designed specifically for connecting to the network analyzer test port.

**10. 1250-1743, Adapter:**

Adapter: 3.5mm male to Type-N male

**11. 1250-1744, Adapter:**

Adapter: 3.5mm female to Type-N male

**12. 85092C, Type-N 50 Ohm RF ECal Module:**

The Agilent 85092C RF electronic calibration (ECal) module used with vector network analyzers, such as N5230A.

ECal is required for calibrating network analyzers.

300 kHz to 9 GHz frequency range

Fast full two-port calibration with a single connection

Simple non-insertable device calibration

NIST traceable accurate calibrations

Reduced connector wear

USB interface for direct control with PNA and ENA series of network analyzers

Reliable solid-state switching